

the base of the second and fourth abdominal segments and a narrow band on each side of the fifth segment, orange; the tibiae, tarsi, and the apex of the femora dark ferruginous, the tegulae rufo-testaceous. Wings hyaline, tinted with fuscous; nervures black.

Length 9 mm.

Hab. Victoria (*French*).

Type in British Museum.

The eyes are separated at the base of the antennæ by a distance equal to about one-third of the length of the scape, the second joint of the flagellum is nearly three times as long as the first and fully half as long again as the third. The first abdominal segment is narrowed to the base.

EXPLANATION OF PLATE XXVI.

Fig.

1. *Harpactophilus arator*, sp. n., p. 461.
2. *Harpactophilus tricolor*, sp. n., p. 462.
3. *Ammophila aurifera*, sp. n., p. 464.
4. *Pseulus interstitialis* Cam., p. 463.
5. *Cerceris inexpectata*, sp. n., p. 469.
6. *Tachytes formosissimus*, sp. n., p. 482.
7. *Notogonia regina*, sp. n., p. 475.
8. *Zoyphium rufonigrum*, sp. n., p. 494.

Fig.

9. *Nysson (Acanthostethus) punctatissimus*, sp. n., p. 505.
10. *Gorytes sanguinolentus*, sp. n., p. 497.
11. *Gorytes lucidulus*, sp. n., p. 498.
12. *Pison melanocephalum*, sp. n., p. 515.
13. *Pison (Aulacophilus) icarioides*, sp. n., p. 521.
14. *Crabro cinctus*, sp. n., p. 531.
15. *Crabro perlucidus*, sp. n., p. 529.

May 26, 1908.

Prof. E. A. MINCHIN, M.A., Vice-President,
in the Chair.

The following papers were read:—

1. The Rudd Exploration of S. Africa.—X. List of Mammals collected by Mr. Grant near Tette, Zambesia. By OLDFIELD THOMAS, F.R.S., F.Z.S., and R. C. WROUGHTON, F.Z.S.

[Received April 14, 1908.]

We now come to the final collection of the Rudd Exploration, for after making it Mr. Grant had a severe attack of fever, and by arrangement with Mr. Rudd he has now come home, so that this magnificent exploration, which has been going on for the last five years, thus comes to an end.

Further details of the papers written on the different collections are appended to the present account, but we may here say that

the results of Mr. Rudd's splendid generosity have far surpassed, in their great and permanent value, our most sanguine expectations—a fact for which the fullest credit must also be given to the collector, Mr. C. H. B. Grant, who has risen in the ablest manner to the great opportunity afforded him by Mr. Rudd.

The total results form the largest collection of Mammals ever received by the National Museum from any one source, the nearest approaches to it being the products of the Simons and Robert expeditions to S. America, and the Duke of Bedford's Exploration of Eastern Asia, the last-named being still in progress.

In all 1541 mammals, exclusive of duplicates, have been registered as presented to the National Museum by Mr. Rudd, while duplicates have been presented to the Royal Scottish Museum, Edinburgh, and the South African Museum, Cape Town.

A considerable and quite unexpected number of new species and subspecies have been discovered, and, what is quite as important, most of the old species, insufficiently or inaccurately described on specimens now deteriorated, have been definitely identified by topotypes, and are represented by good modern material, which may be made the basis of further progress.

In this connection the Tette series, of which we give an account in the present paper, is of especial importance; for every worker on South African zoology has been hampered by the difficulty of making out with exactitude the species obtained during Dr. Peters's famous expedition to Zambesia, and described by him in his 'Reise nach Mossambique,' of which the 'Säugethiere' was published in 1852.

In order, therefore, to get a series of the species described by Peters, Mr. Grant went to Tette, Peters's chief collecting-place, and formed the series enumerated below.

While we were working out this series, the definite determination of Peters's species has enabled us to sort out a number of the groups, with the result that many forms hitherto assigned, in our papers and elsewhere, to Peters's species, now prove to need description.

Mr. Grant's notes on the Tette district are as follows:—

"It was the driest time of the year when I reached Tette, and, except in the main rivers, there was practically no water anywhere, and as, on the Zambesi near Tette, there were too many natives present for it to be possible to collect. I moved southwards and pitched my camp at the junction of the Luenya and Mazoe Rivers, which is some 20 miles due south of Tette.

"The country there is exactly similar to that along the Zambesi, being hilly, and in places somewhat mountainous; the soil is sandy and very stony, especially on the hill-sides, but there are no krantzies that would harbour dassies or red hares.

"All the vegetation, except along the rivers, was dried and dead and the trees leafless, the course of the rivers being plainly shown from a distance by the verdure of the trees on their banks.

"Everywhere the veldt is well bushed, amounting to thickets in most parts, with a fair amount of larger timber, mainly *mopani* and 'cream-of-tartar,' the latter being very plentiful and growing to an enormous size.

"Except in favourable situations, grass does not seem to grow freely, and the cereal crops of the natives are not nearly so good as in many districts to the southward, although tomatoes, onions, &c. are grown freely on the banks and in the beds of the rivers.

"The natives are mixed local tribes variously known as Nyungwis, Tongas, Barués, &c. When not too lazy they give much of their time to the capture of small buck, cats, squirrels, rats, &c., the majority of which they utilize for food.

"The climate cannot be considered healthy, even in the dry season, and the temperature is generally high during the day and makes good collecting difficult.

"In the five weeks I spent in the Mazoe camp the average temperature was 95°, 104° being the highest recorded; no rain fell."

1. *CERCOPITHECUS PYGERYTHRUS RUFОВIRIDIS* Is. Geoff.

♀. 2003.

This specimen, a young female, is undoubtedly the same form as those from Gorongozo mentioned in our last paper, and both are almost certainly *Cercopithecus flavidus* of Peters. We follow Mr. Pocock* in holding that that species is a synonym of *C. rufoviridis*, and accordingly adopt this name for the specimens from Gorongozo and Tette. Mr. Pocock has pointed out (*l.c.*) that the specimens obtained by Mr. Grant in the Knysna, Zululand, and E. Transvaal are all typical *C. pygerythrus* Cuv., and to these we may add the specimens received from Inhambane and Beira since the date of Mr. Pocock's paper. All former identifications in the present series of papers must be modified accordingly.

"Native name, 'Pusi.'

"Only two troops of this monkey were seen and they were exceedingly wild.

"Generally frequenting the trees along the river-banks and observed drinking in the middle of the afternoon."—C. H. B. G.

2. *GALAGO MOSSAMBICUS* Pet.

♂. 2042. ♀. 2028, 2029, 2030, 2031, 2043.

Topotypes of species.

These specimens, which represent "*Otolicmus mossambicus*," confirm what we have stated in describing *G. granti* in a former paper †, namely, that this latter species is readily recognizable on account of its long muzzle.

From *G. moholi* Sm., to which it is no doubt closely allied, *G. mossambicus* is separated by its smaller size (greatest length

* P. Z. S. 1907, p. 737.

† P. Z. S. 1907, p. 286.

of skull 38 mm., of upper tooth-row from front of canine to back of last molar 13·7 mm., against 41 and 15 mm. in *moholi*) and proportionally much longer tail.

3. *EPOMOPHORUS CRYPTURUS* Pet.

♀. 1999.

A young specimen. Topotype of species.

“Native name, ‘Demanyundo.’

“Said to be common, but only the one specimen was seen, and that was put up and shot in the daytime in a thicket on the bank of the Mazoe.”—C. H. B. G.

4. *RHINOLOPHUS LOBATUS* Pet.

♂. 2018. ♀. 2013, 2014, 2019, 2021, 2025.

These are practically topotypes of Peters’s species, the technical type-locality being Sena.

“Native name, ‘Nyagelingwelingwe’; it is the same for all insectivorous bats.”—C. H. B. G.

5. *RHINOLOPHUS HILDEBRANDTI* Pet.

♀. 2009.

6. *HIPPOSIDERUS CAFFER* Sund.

♂. 2024. ♀. 2015, 2016, 2020, 2022, 2023.

“Both species of *Rhinolophus* (vide supra), these, and *Petalia* (vide infra) were all taken out of one tree.”—C. H. B. G.

7. *PETALIA** *CAPENSIS* Sm.

♂. 2011, 2012, 2017. ♀. 2010.

These specimens represent the *Nycteris fuliginosa* of Peters, the type-locality of which was Boror.

8. *VESPERTILIO CAPENSIS* Sm.

♂. 2004.

An exceptionally large individual, but not, we think, separable from *V. capensis*.

9. *SCOTOPHILUS NIGRITA DINGANI* Sm.

♂. 1994.

The various forms included by Dobson under *Scotophilus borbonicus* = *nigrata*, in his ‘Catalogue of the Chiroptera,’ may apparently be separated into two groups by their size—a larger, represented by *S. nigrata* Schreb., and a smaller, the oldest name for which is *S. viridis* Peters.

The present specimen is a topotype of Peters’s *Nycticejus planirostris*, but we are unable to separate it from *S. dingani*.

* = *Nycteris auctorum*.

The forms of *S. African Scotophilus* (including those noticed below) may be arranged in a key as follows:—

- | | |
|--|------------------------------------|
| A. Size larger (forearm 52-57 mm.; skull length 20-21; maxillary tooth-row 7-7.5) | <i>nigrita</i> -group. |
| <i>a.</i> A strong suffusion of yellow in the colouring, making upper surface olive-green, belly bright yellow | <i>S. nigrita dingani</i> Sm. |
| <i>b.</i> No tinge of yellow in the coloration | <i>S. nigrita herero</i> Thos. |
| B. Size smaller (forearm 45-51 mm.; skull length 17-18; maxillary tooth-row 6.3-6.8) | <i>viridis</i> -group. |
| <i>a.</i> A strong suffusion of yellow in the colouring, making upper surface olive-green, belly bright yellow | <i>S. viridis</i> Pet. |
| <i>b.</i> No tinge of yellow in the coloration | <i>S. viridis damarensis</i> Thos. |

“Two species of this genus were secured, neither being common.

“They appear early in the evening and their flight is strong; they hawk the country in wide and regular circuits.”—C. H. B. G.

10. SCOTOPHILUS VIRIDIS DAMARENSIS THOS.

♂. 1955, 1956, 2027, 2032.

Reference was made in the paper on the Inhambane Collection* to the presence in the series of *Scotophilus* of certain specimens smaller in size than the rest; as these smaller specimens possess all the essential characters attributed by Peters to his *Nycticejus viridis*, we accept them as representing that species, the type locality of which is the island of Mozambique.

The present specimens are indistinguishable from *S. damarensis* Thos., and as they also closely resemble the Inhambane specimens except in coloration we rank them as a western race of *S. viridis*.

11. SCOTEINUS SCHLIEFFENI AUSTRALIS, subsp. n.

♂. 1967, 1975, 1993, 2000, 2005, 2007. ♀. 1995, 2001.

On laying out all the specimens of this species in connection with the identification of the present series, it became evident that there are several well-marked geographical races separable on colour characters.

Typical *S. schlieffeni* was based by Peters on a specimen from Cairo. He described it as “supra rufescens, subtus ex albo rufescens.” A second species, *S. minimus*, based on a ♀ from Tanganyika was described by Noack as “oben olivengelbbraun unten weissgelb. Seiten hell umbra . . .” Unfortunately we have no undoubted specimen of either of these for comparison, but we consider that we are justified in describing three forms as certainly distinct from either typical *S. schlieffeni* or *S. minimus* (which latter is at most a local race of the former). These are: (1) a pale desert form from the Aden Hinterland; (2) a white-bellied desert form from Upper Egypt; and (3) the present series from S. Africa.

* P. Z. S. 1907, p. 285.

The following are descriptions of these three forms:—

SCOTEINUS SCHLIEFFENI BEDOUIN, subsp. n.

Rather smaller in size than typical *S. schlieffeni*.

Colour above nearest to "wood-brown," but a much paler shade than that given by Ridgway; below still paler, *i. e.*, the colour containing more white.

Dimensions of type:—

Head and body 41·8 mm.; tail 28·8; forearm 30; ear 9·5.

Skull—greatest length 12·2; interorbital breadth 3·3; brain-case breadth 6·3; breadth across upper jaw at level of m^2 5·6; post-canine tooth-row 3·5.

Hab. Lahej, near Aden.

Type. Adult. B.M. no. 95.6.1.53. Collected on the 12th March, 1895, and presented to the Museum by Col. J. W. Yerbury.

A second specimen taken at the same time only differs in being slightly smaller. The difference in coloration between these specimens and a series of four taken by Mr. W. Dodson, 18th Sept., 1899, at Sheik Othman, only 10 or 12 miles distant—nearer the coast—is most marked. These latter do not differ materially from specimens from the south coast of the Red Sea, which we provisionally refer to typical *schlieffeni*.

SCOTEINUS SCHLIEFFENI ALBIVENTER.

Size as in typical *S. schlieffeni*.

Colour above "ecru-drab," below pure white.

Dimensions of type:—

Head and body 50 mm.; tail 30; forearm 32; ear 9.

Skull—greatest length 12·6; interorbital breadth 4; brain-case breadth 7·3; breadth across upper jaw at level of m^2 5·9; post-canine tooth-row 3·8.

Hab. Naikhala, Upper Egypt.

Type. Adult male. B.M. no. 4.11.3.4. Original number 73. Collected 13 Feb. 1904, and presented to the Museum by the Hon. N. C. Rothschild.

SCOTEINUS SCHLIEFFENI AUSTRALIS.

Size about as in typical *S. schlieffeni*.

Colour above near "mummy brown," below the same colour but paler.

Dimensions of type:—

Head and body 50 mm.; tail 28; forearm 31; ear 12.

Skull—greatest length 13; interorbital breadth 4; brain-case breadth 7; breadth across upper jaw at level of m^2 6; post-canine tooth-row 3·8.

Hab. South Africa (type from Inhambane).

Type. Adult male. B.M. no. 6.11.8.19. Original number 1595. Collected 5 Aug. 1906, by Mr. C. H. B. Grant (Rudd Exploration).

Mr. Grant took two specimens at Inhambane and the present series of eight individuals at Tette. There is but little variation throughout the series, the greatest difference being in size, the forearms ranging from 28 to 31 mm. There is absolutely no sign of the green or olivaceous tinge implied by Noack's description of the colour of *S. minimus*, viz. "olivengelbbraun," and the underside of *S. schlieffeni australis* could by no possibility be characterised as "weissgelb."

It is worthy of record that in one specimen (2005) of the Tette series there is present a well-developed second incisor on the left side of the upper jaw, between the normal incisor and the canine.

12. CHEREPHON LIMBATUS Pet.

♂. 1957. ♀. 1958, 1959.

The type locality of Peters's *Dysopes limbatus* was the island of Mozambique, but he also records it from Sena.

13. NASILIO BRACHYRHYNCHUS Sm.

♀. 1974.

"Native name, 'Nyumdundo.'

"According to native report, common, although I was unable to obtain more than the one specimen.

"Inhabiting the more stony parts of the veldt."—C. H. B. G.

It has been already suggested by Thomas* that Peters's *Macroselides fuscus*, from Boror, was based on an abnormal melanistic example of this species.

14. CROCIDURA sp.

♀. 1960.

"Native name, 'Sutsutsu.'

"Apparently very scarce.

"Frequenting the vegetation and reeds on the river-banks."—C. H. B. G.

15. FELIS SERVAL Erxl.

♀. 2002.

"Native name, 'Njanjanji.'

"Said to be plentiful, and certainly the spoor was frequently seen.

"Nocturnal only, often visiting the kraals at night."—C. H. B. G.

16. GENETTA RUBIGINOSA Puch.

♂. 1968, 1982, 2035.

On collating all the S. African Genets in the Museum

* Ann. Mag. N. H. (6) xiii. p. 70, 1894.

Collection we find that they may be arranged in three well-marked groups, as follows:—

- A. Fore feet black.
- a. Hairs of dorsal crest and tail long (at least 50 mm. near base of tail); dorsal spots relatively small with a distinct tendency to coalesce into longitudinal stripes; tail-tip white *felina*-group.
- b. Hairs of dorsal crest and tail short (not more than 35 mm. near base of tail); dorsal spots large, always distinct; tail-tip black *tigrina*-group.
- B. Fore feet pale; hairs of dorsal crest and tail short (not more than 35 mm. near base of tail); dorsal spots of medium size, not coalescing; tail-tip black *rubiginosa*-group.

felina-group.—In his ‘Mammals of South Africa’ (p. 52, 1900), Mr. Selater records a species under the name of *Genetta senegalensis*, from Lake Ngami. The animal he described is probably the same as *Genetta ludia* Thos. & Schwann* and is certainly a member of our *felina*-group. The distribution of this group is thus the central plateau from Namaqualand to the Transvaal, north of 30° S. lat.; within this area, it is represented in the south by typical *G. felina*, and in the north by *G. ludia*.

tigrina-group.—Occupies the extreme south of Africa below 30° lat., scarcely varying at all, so far as we know, throughout its range.

rubiginosa-group.—*G. letabe* Thos. & Schw., belongs to this group, and it now seems doubtful whether it can be distinguished specifically from typical *G. rubiginosa*.

In his unfinished monograph of the Genets † Prof. Matschie, when establishing *G. zambesiana*, gives the habitat of *G. rubiginosa* as “Caconda u. Küste von Deutsch Süd-West Afrika,” but Pucheran distinctly states in the original description that it was from the Cape of Good Hope. We have compared representatives of this group from Natal, Inhambane, N. and E. Transvaal, Beira, Gorongosa, Tette, and Angoniland, and can find no essential variation, so that if Natal be taken as the type-locality, both *letabe* and *zambesiana* may have to be considered as synonyms of Pucheran’s species. The distribution of the group is therefore all South Africa north of 30° lat. and east of 28° long., extending at least to Angoniland, in 16° S. lat.

“Native names, ‘Mpiswi’ and ‘Mwili.’

“Common, especially near kraals, where they cause considerable annoyance by stealing fowls.

“Strictly nocturnal, never observed in the daytime.”—C. H. B. G.

17. *CROSSARCHUS FASCIATUS* Schreb.

“Native name, ‘Ndembo.’

“Not common; found in small troops.

“Inhabiting the thickest parts of the bush as at Gorongosa.”—C. H. B. G.

* P. Z. S. 1906, p. 579.

† Verhandl. Internat. Zool. Congr. Berl. 1901, p. 1138, &c.

18. MUNGOS AURATUS, sp. n.

♀. 1976, 1996.

A brilliantly fulvous Mongoose about the size of *M. rattamuchi*, but differing in having the hairs of the back annulated.

Size about as in *M. rattamuchi*. General colour above "ochraceous buff," darker on the back and tail; below "ochraceous buff." Individual hairs of the rump and back, as far forward as the shoulders, basally "drab-grey," then "ochraceous," paling to "buff" at the tip, with a subterminal black ring; those of the crown and face ringed buff, black, buff and tawny; those of the nape, sides of the throat, shoulders, flanks, limbs, and belly "ochraceous buff" almost to their bases, which are "mouse-grey." Tail coloured like the back for two-thirds its length, then dark "tawny," with a black tip 60-70 mm. long.

Skull as in *M. rattamuchi*.

Dimensions of type:—

Head and body 324 mm.; tail 290; hind foot 62; ear 26.

Skull—condylo-basal length 62; basilar length 57; zygomatic breadth 33; palate breadth across p¹ 21; length c-m¹ 21·5.

Hab. Tette, Portuguese Zambesia.

Type. Adult female. B.M. no. 8.4.3.46. Original number 1976. Collected August 26th, 1907.

A second specimen, a younger female, is quite like the type, and Mr. Grant assures us he saw several more.

This beautiful new Mongoose is an unexpected discovery, as Tette is the type-locality of Peters's *Herpestes ornatus*, which Mr. Grant supposed he had secured. But *ornatus*, as shown by Peters's figure and descriptions, is allied to and probably identical with the much darker coloured *M. cauvii* Smith*, of which the Museum possesses specimens from both north and south of Tette.

"Native name, 'Runkoe.'

"Several of this species were observed, but were difficult to trap.

"Found everywhere, especially near kraals.

"Certainly diurnal, perhaps nocturnal also."—C. H. B. G.

19. FUNISCIURUS CEPAPI SINDI, subsp. n.

♂. 1961, 2006, 2026. ♀. 1941, 1969, 1985.

On laying out the available specimens of *F. cepapi* it becomes evident that there are two well-marked geographical races, a northern and a southern, separable on their coloration. The type-locality is given by Smith as "the banks of the Marikwa R.," i. e., the upper basin of the Limpopo River, in the southern part of

* Cf. Wroughton, Ann. Mag. N. H. (7) xx. p. 120, 1907. It may be noted here that the subspecies from Zanzibar described by Wroughton in this paper as *Mungos melanurus lasti* is antedated by *Herpestes ornatus rufescens* Lorenz (Abh. Senck. nat. Ges. xxi. Heft iii. p. 462, 1898), a name of which no indication is given in the title to the article, and which has therefore been missed by all recorders and bibliographers since.

the combined range, and we therefore separate the present series as a northern subspecies under the name of *F. cepapi sindi*.

Size as in typical *F. cepapi*. Fur rather shorter (5-7 mm. on the back). Colour-pattern above as in true *F. cepapi*; below pure white all over instead of the white being limited to (at most) the chin, throat, and chest as is the case in *F. cepapi*, which has the belly washed with clay-colour. Back of thighs and midrib of tail beneath bright ochraceous. Individual hairs of tail ochraceous with two black rings, so that when the hairs are spread out at right angles to the midrib there are two black longitudinal bands running the whole length of the tail (as seen from below) parallel to the midrib; in typical *F. cepapi* the ground-colour of the tail-hairs is dull "clay-colour" with three black rings, and consequently the resultant black longitudinal stripes are three in number. Tail equal in length to head and body, proportionally somewhat shorter than in typical *F. cepapi*.

Skull slightly smaller, brain-case broader and fuller.

Dimensions of type:—

Head and body 170 mm.; tail 168; hind foot 39; ear 20.

Skull—greatest length 43; basilar length 33; interorbital breadth 12; length of upper molar tooth-row (exclusive of p³) 7.6.

Hab. Lower Basin of Zambesi (type from Tette).

Type. Adult female. B.M. no. 8.4.3.51. Original number 1941. Collected 18th August, 1907.

The specimens from Gorongoza mentioned in our last paper on the Rudd Exploration (P. Z. S. 1908, p. 169) must be included in this subspecies, though they show the distinctive characters less markedly than the Tette series.

"Native name, 'Sindi.'

"Common, generally observed in pairs.

"Living on the berries, &c., of the trees and shrubs, for which they may often be seen hunting on the ground.

"When alarmed they quickly make for some large tree and disappear into a hole or cavity.

"Diurnal, active in the early morning and late afternoon, resting during the heat of the day."—C. H. B. G.

20. TATERA LOBENGULÆ de Wint.

♂. 1947, 1951, 1952, 1953. ♀. 1942, 1943, 1944, 1945, 1946, 1954.

Externally these specimens cannot be separated from those from Beira and the Limpopo Valley, *i. e.* from *T. lobengulæ bechuane*, but while having the same narrow skull as that subspecies they approximate to *T. lobengulæ mashone* in having rather smaller bullæ than the Limpopo form.

"Native name, 'Mpynya.'

"Common and found everywhere, especially in clearings and native lands."—C. H. B. G.

Peters's "*Meriones leucogaster*" (type-locality Mesuril) is a member of the short-tailed group, of which most of the species are found north of the Zambesi.

21. *ARVICANTHIS DORSALIS CALIDIOR*, subsp. n.

♀. 1962.

Comparison of the series from the Zambesi Basin with those from the Transvaal and Zululand, which, as the type shows, represent the true *Arvicanthis dorsalis* of Smith, establishes the fact that individuals of the former are easily separable by their darker, warmer colouring, and we propose to separate them as a geographical race under the name of *Arvicanthis dorsalis calidior*.

Size and fur as in typical *A. dorsalis*.

Colour-pattern richer and darker than in the southern form. General colour "chestnut" above, individual hairs dark slate with "vinaceous cinnamon" band and black tip; in true *A. dorsalis* the general aspect is near "clay-colour" and the pale rings of the individual hairs are the palest buff.

Dimensions of the type:—

Head and body 135 mm.; tail 146; hind foot 27; ear 17.

Skull—greatest length 34; basilar length 27; zygomatic breadth 16; diastema 8.5; upper molar series 6.

Hab. Zambesi Basin (type from Tambarara, Gorongozo Mountains).

Type. Old male. B.M. no. 8.1.1.72. Original number 1817. Collected 13th March, 1907.

The present specimen from Tette, though immature, is identifiable as belonging to this subspecies, in which also should be included the specimens dealt with in our paper on the collection from Beira (P. Z. S. 1907, p. 779), a series in the Museum Collection from Mashonaland, collected by Mr. J. ff. Darling, others presented by Mr. C. F. M. Swynnerton from Chirinda, &c.

"Native name, 'Mhoni.'

"Rare in this district, the specimen sent being the only one taken or observed."—C. H. B. G.

22. *MUS MICRODON* Peters.

♂. 1964, 1965, 1966, 1972, 1973, 1983, 1984, 1987, 1988, 2008. ♀. 1979, 1981, 1990, 1991, 1992.

Topotypes of species.

The characters of these specimens prove that the group of South African multimammate mice is divisible into two species. The present one, with a tail equal in length to the head and body combined, extends, so far as we can judge from the specimens available, from Natal and Zululand northwards along the coast and throughout the Northern Transvaal and Rhodesia to the Zambesi. The second species, *Mus coucha*, recognisable by its proportionally much shorter tail, is represented in the Museum

Collection from the South-West Transvaal, Bechuanaland, Orange River Colony, Basutoland, and as far south as Deelfontein and King William's Town, in Cape Colony (*i. e.*, about 33° S. lat.). Mr. Selater in his 'Mammals of South Africa' records it from the Cape and Namaqualand, but Mr. Grant failed to obtain it in either of these localities.

We are doubtful if *Mus coucha zuluensis* Thos. & Schw.* can be retained as a subspecies distinct from true *M. microdon*, with which its describers had not an opportunity of comparing it.

"Native name, 'Ntisha.'

"Abundant everywhere; habits similar to those of *M. coucha zuluensis*."—C. H. B. G.

23. *MUS CHRYSOPHILUS INEPTUS*, subsp. n.

♂. 1949, 1950, 1963, 1971. ♀. 1978, 1989.

Like true *chrysophilus*, but with lower skull and narrower brain-case.

Size as in the typical form, but hind foot on the average shorter and tail proportionally longer. Colour also as in *chrysophilus* but paler, the slaty bases of the hairs markedly paler both above and below.

Skull about the same length as in the type form, but markedly narrower and flatter; the brain-case much smaller; the whole skull lower, height from alveolus of m² to crown 9 mm. against 10 in true *M. chrysophilus*.

Dimensions of type:—

Head and body 148 mm.; tail 182; hind foot 27; ear 21.

Skull—greatest length 37; basilar length 29; zygomatic breadth 17; brain-case breadth 13; nasals length 16; diastema 9.5; molars 5.7.

Hab. Tette, Portuguese East Africa.

Type. Old male. B.M. no. 8.4.3.73. Original number 1949. Collected 22nd August, 1907.

In the series of 7 specimens obtained by Mr. Grant several have broken tails, but in those which are complete, the head and body varying between 145 and 150 mm., the tail reaches 180, whereas in typical *M. chrysophilus* specimens of the same size have a tail-length of about 170. The greatest breadth and brain-case breadth in the type skull of the species are recorded by Mr. de Winton as 18 and 15 mm. respectively; a comparison with the similar measurements given for this local race shows how markedly narrow its skull is; moreover, in true *M. chrysophilus* the greatest breadth is at the posterior end of the zygomatic arch, while in *M. c. ineptus* it is across its anterior end. The type is distinctly older than the individual described by Mr. de Winton.

"Native name, 'Kwisikwisi.'

"Fairly common and inhabiting both the bush and the native lands."—C. H. B. G.

* P. Z. S. 1905, 1. p. 268.

We take this opportunity of describing a second local race of *M. chrysophilus*:—

MUS CHRYSOPHILUS ACTICOLA, subsp. n.

A large coast form of *M. chrysophilus*, the hind foot always markedly longer than in that animal.

Size somewhat larger than in true *M. chrysophilus*.

General colour as in the type form, but the slaty bases of the hairs of the under surface markedly shorter and very much paler than in the true *chrysophilus*, in which the slaty bases of the hairs of the lower surface of the body do not differ materially in shade from those of the back.

Skull larger than in the typical subspecies, but the bullæ slightly smaller. Height at m^2 10 mm.

Dimensions of the type:—

Head and body 155 mm.; tail 202; hind foot 34; ear 23.

Skull—greatest length (c.) 39; basilar length 30.5; zygomatic breadth 19; brain-case breadth 15; nasals length (c.) 15; diastema 10; molars 6.2.

Hab. Coast between Limpopo and Zambesi Rivers (type from Beira).

Type. Adult male. B.M. no. 7.6.2.59. Original number 1752. Collected 25th December, 1906, by C. H. B. Grant (Rudd Exploration).

The type of *M. c. acticola* is of about the same age as that of true *M. chrysophilus*. In a long series of adult specimens from Inhambane and Beira the hind foot is recorded as low as 30 mm. in only three specimens, whereas in a large number of typical *M. chrysophilus* it never exceeds 29. The tail would seem to be proportionally quite as long as, or even longer than, in *M. c. ineptus*.

24. *MUS AVARILLUS*, sp. n.

♀. 1980.

A mouse outwardly resembling *M. namaquensis*, but with the teeth of *M. chrysophilus*, of which it is probably a dwarf relative.

Size rather smaller than in *M. namaquensis*. Fur soft and silky, but rather short (8–9 mm. on the back, 5–6 on the belly). Colour as in *M. namaquensis*, but the shorter coat allowing the basal slaty portion of the hairs to show through gives the upper side a duller general colour and makes the belly greyish white instead of the apparently pure white of *namaquensis*.

Skull a copy in miniature of *M. chrysophilus*. Teeth as in that species.

Dimensions:—

Head and body 105 mm.; tail 143; hind foot 26; ear 21.

Skull—greatest length 31; basilar length 23; greatest breadth 14; brain-case breadth 12.5; interorbital breadth 4.9; nasals 11.6; diastema 7.6; upper molar series 6; bullæ 5.3.

Hab. Tette, Portuguese Zambesia.

Type. Adult female. B.M. no. 8.4.3.79. Original number 1980. Collected 27th August, 1907.

Outwardly this species has a most striking resemblance to *M. namaquensis*, but its skull and teeth characters separate it readily from any member of that group. The shape of the skull and large size of the teeth point conclusively to its close affinity to *M. chrysophilus*, of which it is no doubt a dwarf form.

[*MUS ARBORARIUS* Peters.

As this species was based on specimens from Tette we have given special attention to its identification. Peters in his description* mentions two specimens, but as he quotes the dimensions of the female in the diagnosis and figures its skull (that of the male being still in the stuffed specimen †) we adopt it as the type. He gives an excellent figure of the skull (*l. c.* pl. xxxv. fig. 7), and this agrees in all essential characters with that of a specimen from Salisbury, Rhodesia, belonging to a widely-spread species, of which we have been able to recognise at least four local races, as follows:—

1. *MUS NAMAQUENSIS* Sm. *Hab.* Namaqualand. (= "*Mus auricomis* de Wint.," Thos. & Schw. P. Z. S. 1904, p. 179.)
2. *MUS NAMAQUENSIS CENTRALIS* Schw. *Hab.* Deelfontein, C.C. (= *Mus auricomis centralis* Schw. P. Z. S. 1906, p. 107.)
3. *MUS NAMAQUENSIS LEHOCLA* Sm. *Hab.* Kuruman. (= *Mus lehocla* Sm. Type locality "Latakoo.")
4. *MUS NAMAQUENSIS AURICOMIS* de Wint. *Hab.* Mashonaland. (= *Mus auricomis* de Wint. P. Z. S. 1896, p. 802.)

We have unfortunately no material to enable us to judge whether *arborarius* is identical with the Mashonaland race or whether, as seems to us more probable, it forms a fifth geographical subspecies.

This identification altogether removes *arborarius* from the *Thamnomys* group, to which it has been usually referred, perhaps on the evidence of the stuffed male, which may possibly prove to be an example of the next species.

The skull of *Mus namaquensis* has, as Peters's figure of "*arborarius*" shows, evenly divergent supraorbital ridges, cut back anterior zygomatic plate, small bullæ, and comparatively broad parapterygoid fossæ, all these characters being in contrast with those shown by the Tette *Thamnomys* next to be described.

The definite determination of the old types of Smith's *Gerbillus namaquensis* and *Mus lehocla* is one of the many advantages gained from the study of the Rudd Collection.]

* Reis. Mossamb. p. 152, 1852.

† At least when Thomas examined it in Berlin in 1887.

25. *THAMNOMYS RUDDI*, sp. n.

♂. 1970. ♀. 2033, 2036.

A *Thamnomys*, belonging to the group in which the characteristic third inner cusps of the upper molars are reduced to a ridge, and with the mammary formula 1—2 = 6.

Size about as in *Mus namaquensis auricomis*. Fur soft and fairly long (12 mm. on the back). General colour above near "clay-colour"; below pure white. Individual hairs of the back basally slate-colour for two-thirds their length, then buff; a small proportion of black hairs scattered through the coat; belly-hairs white to their bases. Hands and feet white.

Skull with a marked interval (2 mm. or more) between the hensenion and the commencement of the palatal foramina.

Dimensions of the type:—

Head and body 124 mm.; tail 160; hind foot 22; ear 20.

Skull—greatest length 32·5; basilar length 26; greatest breadth 15·5; brain-case breadth 13·2; interorbital breadth 5; nasals length 12; palatal foramina 7; diastema 8·5; upper molar series 5; bullæ 7.

Hab. Tette, Portuguese East Africa.

Type. Old female. B.M. no. 8.4.3.81. Original number 2033. Collected 14th Sept., 1907. Three specimens examined.

"Native name, 'Nsunto.'

"This species, although undoubtedly common, is difficult to secure owing to its arboreal habits.

"It inhabits the hollows of decayed and dead trees, in which it makes warm nests of leaves, &c., of no particular shape, merely filling up the cavities with débris.

"Strictly nocturnal; one specimen was shot at night whilst climbing among the branches of a small tree when I was sitting up for *Galago*."—C. H. B. G.

In working out this *Thamnomys* we have found that the two following forms also require description:—

THAMNOMYS COMETES, sp. n.

A *Thamnomys* belonging to the same group and about the same size as the last, but with a markedly longer tail.

Size as in *T. ruddi*, but tail one-third longer. Fur soft, shorter than in *T. ruddi* (9–10 mm. on the back). Colour almost exactly as in *T. ruddi*. Hands and feet white.

Skull with bullæ and teeth smaller, and palatal foramina produced more forward than in *T. ruddi*.

Dimensions of the type:—

Head and body 124 mm.; tail 195; hind foot 24; ear 20.

Skull—greatest length 33·2; basilar length 26; greatest breadth 15·8; brain-case breadth 13·6; interorbital breadth 5; nasals length 12·5; palatal foramina 8; diastema 8·5; upper molar series 4·5; bullæ 6.

Hab. Inhambane, Portuguese East Africa.

Type. Old female. B.M. no. 6.11.8.115. Original number 1644. Collected by Mr. C. H. B. Grant, 18th August, 1906 (Rudd Exploration).

Three specimens examined. The proportionally very long tail, the smaller teeth and bullæ, and the extension forward of the palatal foramina almost to the henselion serve to distinguish *cometes* at once from *ruddi*, which in colour it so closely resembles.

THAMNOMYS SURDASTER, sp. n.

A smaller *Thamnomys* belonging to the same group as the two described above, but with smaller skull, teeth, and bullæ, and colour-pattern as in the *rutilans*-group.

Size somewhat smaller than in *T. ruddi*. Fur soft, short (7-8 mm. on the back). General ground-colour above "clay-colour," with strong tawny suffusion on rump and lower back, often extending forward even to the crown; below pure white. Hands and feet buff, fingers and toes white.

Skull small, teeth and bullæ very small.

Dimensions:—

Head and body (c.) 110 mm.; tail 160; hind foot 22; ear 18.

Skull—greatest length 29; basilar length 22; greatest breadth 14; brain-case breadth 12; interorbital breadth 4.5; nasals length 10.6; palatal foramina 5.8; diastema 7.2; upper molar series 4; bullæ 5.

Hab. Nyasaland and North-East Rhodesia. (Type from Zomba.)

Type. Adult. B.M. no. 93.5.2.27. Collected by Mr. A. Whyte in October 1892 and presented by Sir H. H. Johnston.

Three specimens from Zomba examined. The Museum has an example from Angoniland and one from the East Loangwa District (collected by Mr. S. A. Neave), which also appear to belong to this species.

26. SACOSTOMUS CAMPESTRIS Peters.

♂. 1948, 1977.

Topotypes of species*.

These specimens confirm our opinion that in South Africa there are two forms in this genus, the smaller ones represented by *S. campestris*, and a larger, for which the oldest name is *S. mashonae* de Wint.

"Native name, 'Psuku.'

"Apparently rather scarce and usually taken in native cultivation along the banks of the rivers.

"The cheek-pouches of the specimens sent contained sweet potato."—C. H. B. G.

* Reis. Mossamb. 1852, p. 167, pl. xxxiv. fig. 3 & pl. xxxv. fig. 12.

27. *STEATOMYS PRATENSIS* Peters.

♂. 2038, 2040, 2041. ♀. 2039.

Topotypes of species.

"Native name, 'Nsana.'

"Not found nearer Tette than the southern side of the Luenya and Mazoe Rivers, and even there not plentifully.

"Lying dormant in small burrows throughout the winter. The specimens sent were dug out and were excessively fat and lazy."—C. H. B. G.

28. *HIPPOTAMUS AMPHIBIUS* L.

♂. Luenya River.

"Native name, 'Umvu.'"—C. H. B. G.

29. *CEPHALOPHUS GRIMMI* L.

♂. 1997.

"Native name, 'Mhemwi.'

"Fairly common, but as it generally inhabits the thickets it is not easy to shoot.

"Feeding in the early morning and late afternoon and probably throughout the night.

"Observed going to water just before sundown."—C. H. B. G.

30. *RAPHICEROS SHARPEI COLONICUS* Thos. & Schw.

♀. 2034 (juv.).

"Native names, 'Kesenyi' and 'Gagoro.'

"Several of this species were seen, but always in such thick country that it was impossible to get a shot.

"Inhabiting broken and hilly country, thickly bushed."—C. H. B. G.

31. *NEOTRAGUS LIVINGSTONIANUS* Kirk.

♂. 2037 (juv.).

"Native name, 'Mrumsa.'

"Decidedly scarce, owing principally to the natives driving and catching them in nets and also to there not being a great deal of country suitable to their habits.

"Only found in the thickest bush.

"The Livingstone Buck is found near Beira, but is not found in Gorongoza, where it is quite unknown to the natives."—C. H. B. G.

32. *ÆPYCEROS MELAMPUS* Licht.

♂. 1940.

"Native name, 'Impala.'

"Only seen in small herds, seldom exceeding six in number, they having been much shot out, and no old rams were seen.

"Out feeding on the short grass in the open glades in the early

morning, where they can sometimes be approached within shot, retiring soon after sunset to the thickest and more inaccessible parts of the bush.

“The alarm-call is a loud snort.”—C. H. B. G.

The following is a list of the papers which have been published on the mammals presented by Mr. Rudd, and we have supplemented it by mentioning such other papers as have been published both here (also largely based on Mr. Rudd's specimens) and in S. Africa during the same period, thus making this a bibliography of S. African Mammalogy subsequent to the publication of Selater's ‘Mammals of S. Africa.’

The Rudd papers are arranged chronologically under the headings of the localities dealt with :—

- I. British Namaqualand.
O. Thomas & H. Schwann, P. Z. S. 1904, i. pp. 171–183, pl. vi. (28 species.)
- II. S.E. Transvaal—Wakkerstroom.
Iid. P. Z. S. 1905, i. pp. 129–138. (26 spp.)
- III. Zululand.
Iid. P. Z. S. 1905, i. pp. 254–276, pl. xvi. (49 spp.)
- IV. Knysna.
Iid. P. Z. S. 1906, i. pp. 159–168. (31 spp.)
- V. N.E. Transvaal—Klein Letaba and Woodbush.
Iid. P. Z. S. 1906, pp. 575–591. (51 spp.)
- VI. E. Transvaal—Legogot.
Iid. P. Z. S. 1906, pp. 779–782. (25 spp.)
- VII. Inhambane—Coguno.
O. Thomas & R. C. Wroughton, P. Z. S. 1907, pp. 285–299. (39 spp.)
- VIII. Beira.
Iid. P. Z. S. 1907, pp. 774–782. (29 spp.)
- IX. Gorongoza Mts.
Iid. P. Z. S. 1907, pp. 164–173. (32 spp.)
- X. Tette, Zambesia (as above).
Iid. P. Z. S. 1908, pp. 535–552. (32 spp.)

Other papers based wholly or in large part on Rudd material :—

- Andersen, K. Five new *Rhinolophi* from Africa. Ann. Mag. N. H. (7) xiv. p. 378, 1904.
- On *Hipposiderus caffer* Sund. and its closest allies. Ann. Mag. N. H. (7) xvii. p. 269, 1906.
- Thomas, O. A new Mongoose (*Herpestes ruddi*) from Namaqualand. Ann. Mag. N. H. (7) xii. p. 465, 1903.
- A new Golden Mole (*Amblysomus corriæ*) from Knysna. P. Z. S. 1905, ii. p. 57.

- Wroughton, R. C. On the various forms of *Arvicanthus pumilio* Sparrm. Ann. Mag. N. H. (7) xvi. p. 629, 1905.
- Notes on the Genus *Tatera*, with descriptions of new species. Ann. Mag. N. H. (7) xvii. p. 474, 1906.
- Notes on the Genus *Otomys*. Ann. Mag. N. H. (7) xviii. p. 264, 1906.
- On three new Mammals from S. Africa. Ann. Mag. N. H. (7) xx. p. 31, 1907.
- On the African Mongoose usually referred to the *Herpestes gracilis* group. Ann. Mag. N. H. (7) xx. p. 110, 1907.

Other papers bearing on S. African mammalogy that have been published during the last few years are:—

- Broom, R. On some new species of *Chrysochloris*. Ann. Mag. N. H. (7) xix. p. 262, 1907.
- A Contribution to the Knowledge of the Cape Golden Moles. Trans. S. Afr. Phil. Soc. xviii. p. 283, 1907.
- Further Observations on the Chrysochloridæ. Ann. Transvaal Mus. i. p. 14, 1908.
- De Winton, W. E. On *Cynictis selousi* de Wint. P. Z. S. 1901, p. 2, pl. i.
- Gough, L. H. On a new Species of *Rhinolophus* from Pondoland. Ann. Transvaal Mus. i. p. 71, 1908.
- Jameson, H. L. On a new Hare from the Transvaal. Ann. Mag. N. H. (7) xx. p. 404, 1907.
- Matschie, P. Ueber die Abänderungen der Ginsterkatzen (*Genetta*). Verh. V. Internat. Zool. Congress, Berlin, p. 1128, 1902.
- Schwann, H. List of Mammals obtained by Messrs. R. B. Woosnam and R. E. Dent in Bechuanaland. P. Z. S. 1906, i. p. 101. (25 spp.)
- On *Felis ocreata*, better known as *Felis caligata*, and its subspecies. Ann. Mag. N. H. (7) xiii. p. 421, 1904.
- Thomas, O. On two new Hares allied to *Oryctolagus crassicaudatus*. Ann. Mag. N. H. (7) x. p. 244, 1902.
- On some new forms of *Otomys*. Ann. Mag. N. H. (7) x. p. 311, 1902.
- The common Hare of Central Cape Colony. Ann. Mag. N. H. (7) xii. p. 343, 1903.
- On a remarkable new Hare (*Lepus monticularis*) from Cape Colony. Ann. Mag. N. H. (7) xi. p. 78, 1903.